Cost studies and resource challenges: the Dutch perspective

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34th Annual DoD Cost Analysis Symposium

January 30 -February 2, 2001

The Lodge, Williamsburg, Virginia, USA

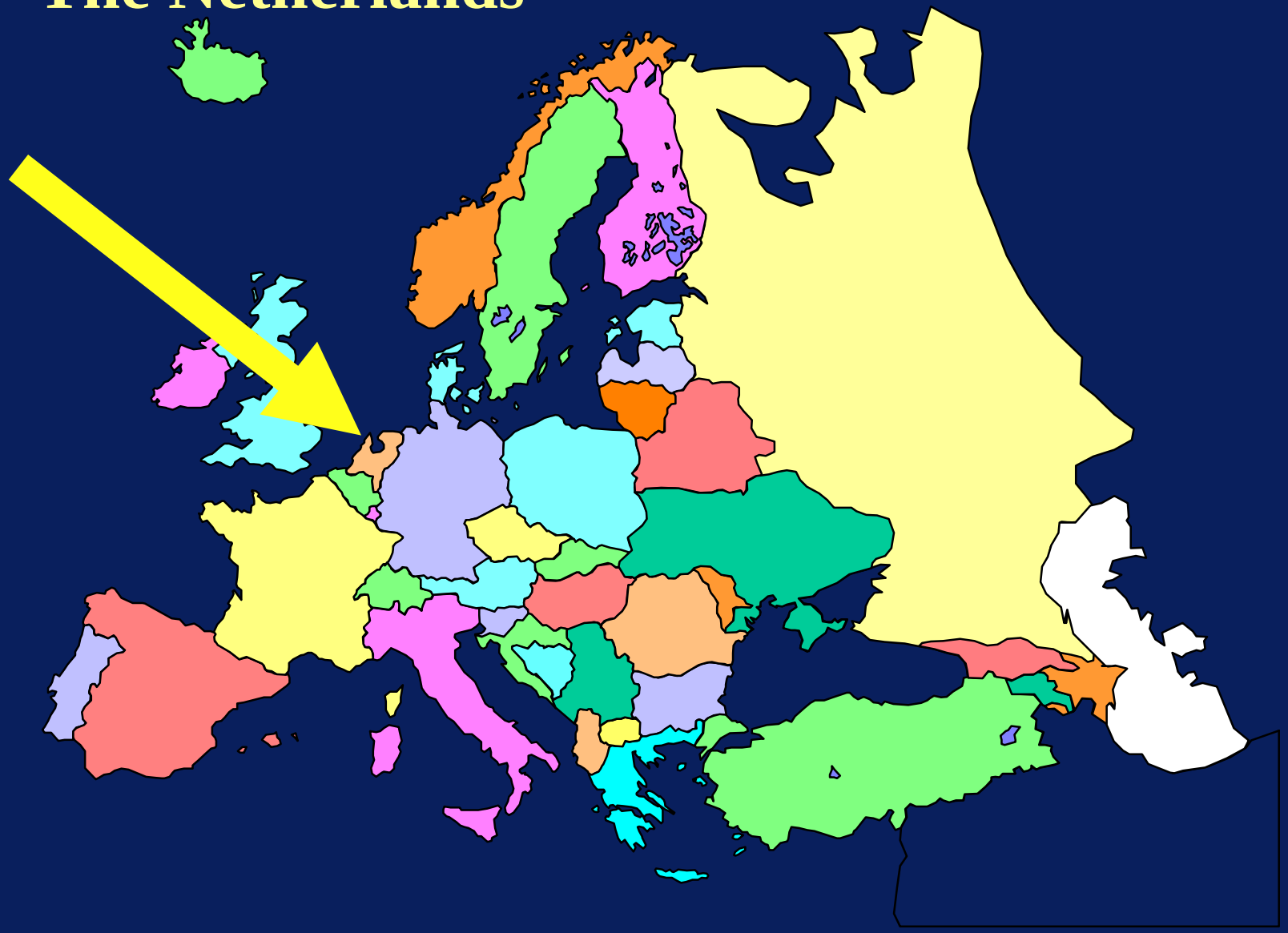
Overview briefing

- **The Netherlands compared to US**
- **TNO**
- **LCC studies in the Netherlands**

- **Resource challenges:**
  - Personnel
  - Spare parts

- **How can cost studies help in encountering the challenges**

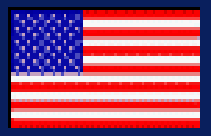
The Netherlands



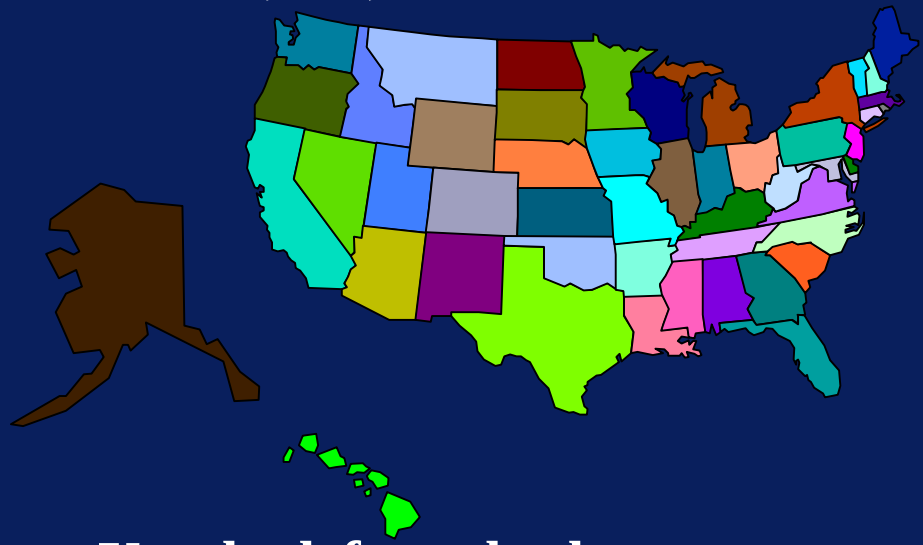
The Netherlands compared to US

- Population: 16 million
- Area 33,920 km2

- Yearly defence budget:
  Hfl. 15 billion ($ 6 billion)



- Population: 275 million
- Area 9,158,960 km2

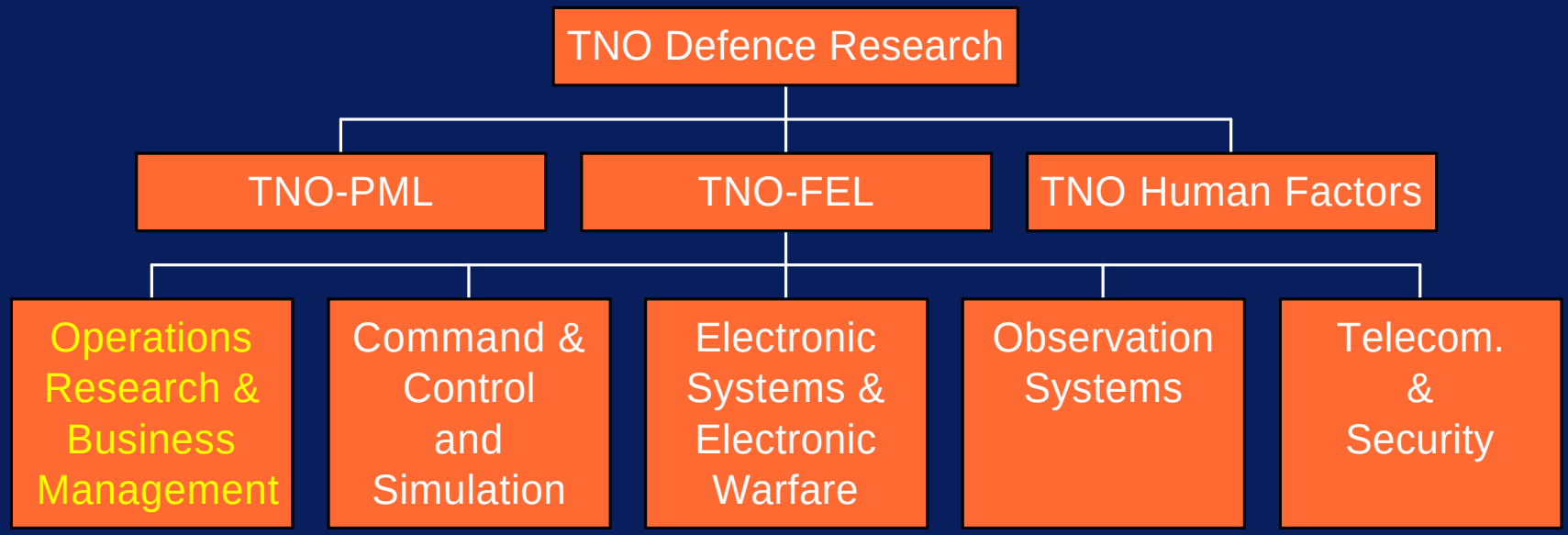


- Yearly defence budget:
  $ 300 billion (?)

Core Areas TNO

1. Product development and new production techniques
2. New materials
3. Sustainable processes, use of energy and materials
4. Defence
5. Information and communications technology
6. Applied physics
7. Nutrition and food
8. Prevention and health
9. Labour and labour environment
10. Transport and logistics
11. Building and infrastructure
12. Subsurface and natural resources
13. Innovation management
14. Public safety

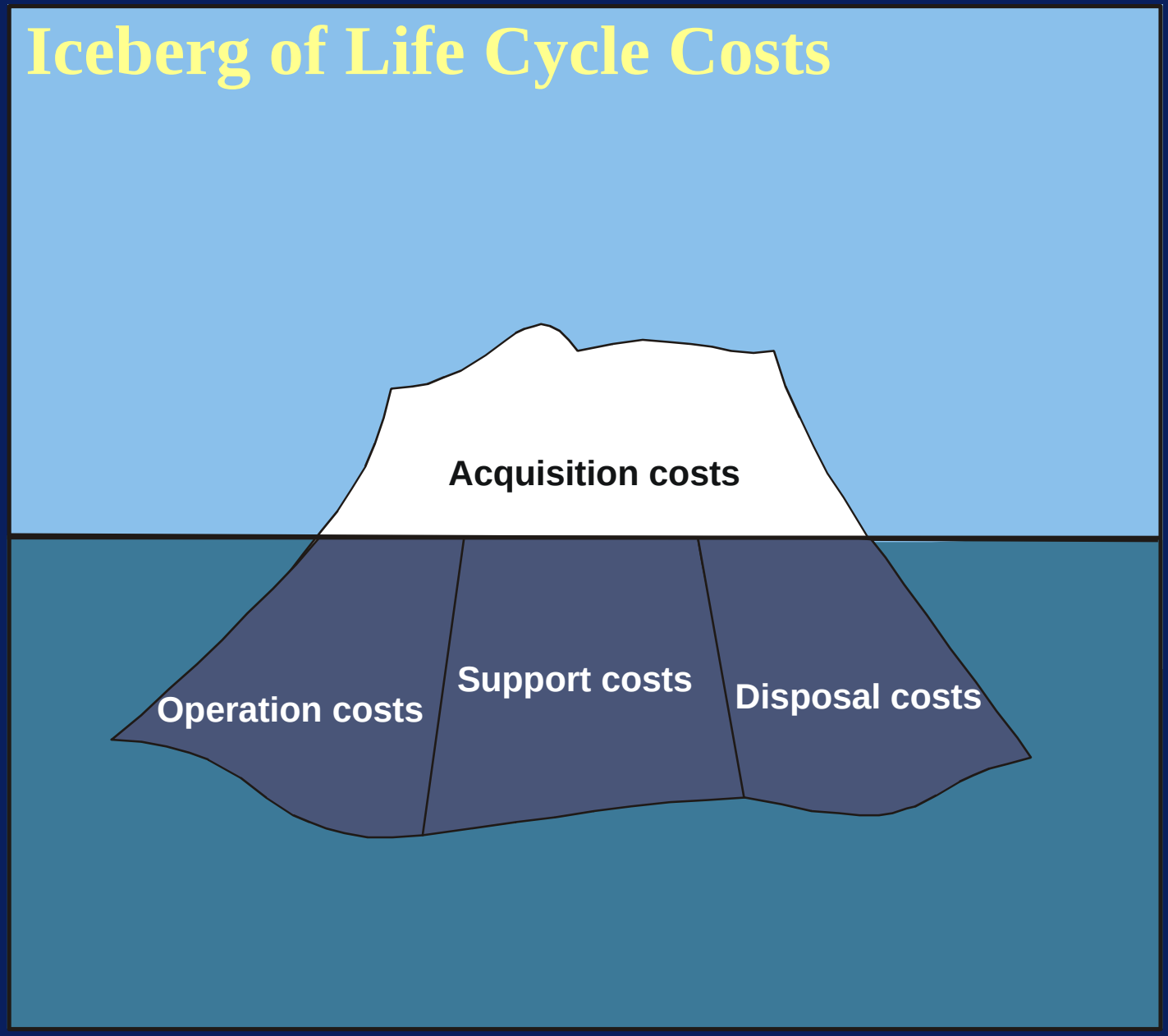
Overview TNO Defence Research



LCC definitions

- Life Cycle Costs (LCC) of (military) systems: all costs incurred by owner of equipment as result of acquisition, operation and support at required standard of performance, and disposal
- LCC: sum of all costs from earliest planning to final disposal that would not have been made if the project had not been undertaken.
- Life Cycle Cost Analysis (LCC-analysis): systematic process of estimating the LCC and analysing the impact of important factors of influence.

Iceberg of Life Cycle Costs

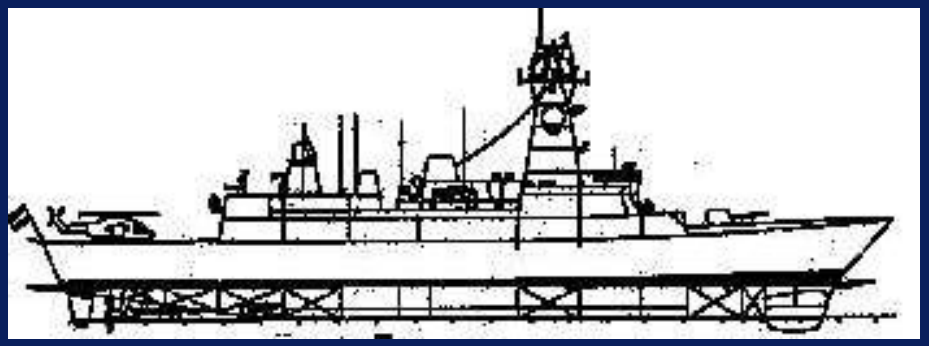


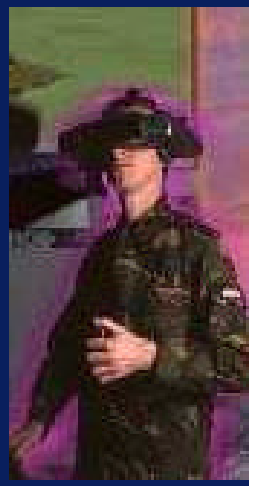
Organisation LCC-studies in the Netherlands

- **Mainly used in acquisition process of new military systems**
- **Military systems are often procured COTS**
- **LCC-studies are obliged in all stages of the Defence Materiel acquisition Process (DMP)**
- **Project team inside the Armed forces responsible for procurement of military systems**

- **Involvement TNO-FEL ORB:**
  - developers of step-by-step method (FELSALDO)
  - involved in more complex LCC-studies
  - (assist in) composing questionnaires to be answered by industry as part of RFI, RFQ or RFP
  - (assist in) evaluating answers from industry

Some examples LCC studies



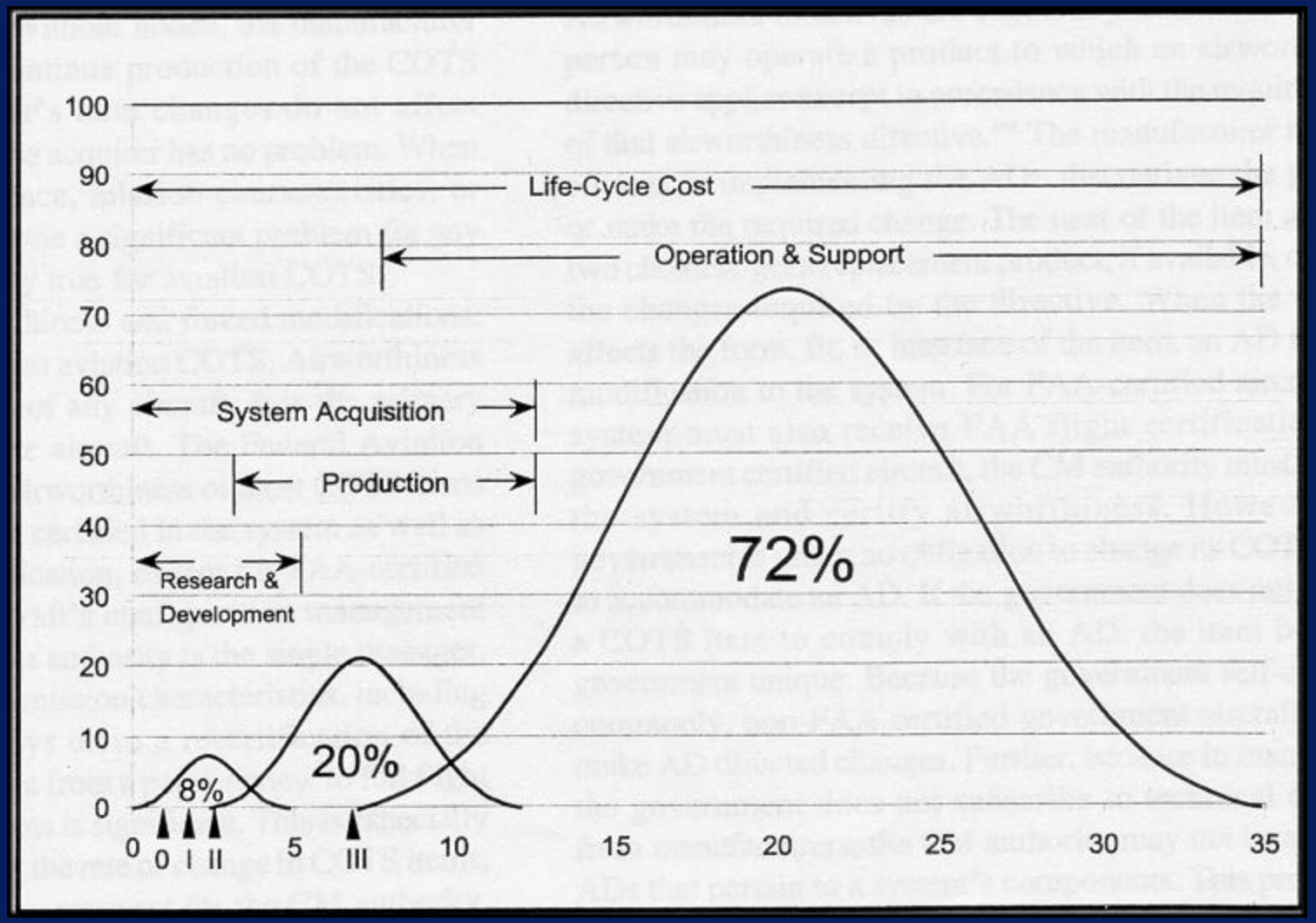


- Armed helicopter: Apache vs. Tigre (RNLAF)
- Future Reduced Costs Comb.(FRCC) (RNLN)
- Forward Air Controller (FAC) simulator (RNLA)
- Update missile Patriot: PAC-3 (RNLAF)
- Manpack HF/EZB radios (RNLA)
- Helicopters National Police Agency (Civ.)
- Trams Rotterdam Electric Tram (Civ.)

New major procurement projects

- Replacement F-16 (RNLAF)
- NESRADS (RNLA)
  (NEtherlands Short Range Air Defence System)
- Replacement armoured vehicles (RNLA)
- Air defence and command frigate (LCF) (RNLN)

Cost distribution over the Life Cycle



Reference: Air Force Journal of Logistics

Type of LCC-analyses in acquisition phase

- **Estimate total costs new equipment**
- **Compare LCC different options to fulfil requirements:**
  - more than one candidate or options per candidate
  - choose way of procurement: buy or lease
  - choose type of support
  - determine best moment of introduction new system
- **Determine important factors of influence / cost-drivers**
- **Determine coherence between different cost elements: Cost model**
- **Sensitivity analyses on important factors of influence or uncertain cost elements**

Resource challenges: Personnel

- **Trouble in trying to fill required functions:**
  - Since mid 90s no conscripts
  - Low unemployment figures
  - UN missions: no “secure” jobs anymore

Resource challenges: Spare parts

- **Overstock of spare parts**
  - quantity rebate in acquisition
  - parts have better reliability than expected
- **Too few spare parts**

How can cost studies help in encountering challenges

- **Compare alternatives**
  - e.g. 2LM versus 4LM
- **Personnel**
  - more support by industry: contractor services
  - new equipment may reduce required quantity
  - quantity of personnel no starting point anymore
- **Spare parts**
  - detailed studies on spare parts in procurement projects
  - buy stocks for only three years in advance
  - updates studies with new reliability figures

Reservations with LCC-analyses

- Not always justified
- Provides estimations and insight in costs, not exact costs, avoid seeming accuracy
- Only one of the decision parameters: One of four P's (price, performance, participation and politics)

Any questions ?